

Docket No.: 300.1126

Serial No. 10/661,530

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1, 2 and 13 in accordance with the following:

1. (AMENDED) A method for producing a wiring substrate provided with bumps protruding from a surface of the substrate, the method comprising: ~~the steps of:~~

covering one side of a metallic base with an electrical insulating film and forming open holes in the insulating film so as to expose₁ at the bottoms thereof₁ the base₁;

etching the base using the insulating film₁ having the open holes formed therein as a mask₁ to form concavities in the base₁;

electroplating the interior face of each of the concavities₁ using the base as a plating power supply layer₁ with a first material to form a barrier metal film on the interior face of each of the concavities₁;

filling the concavities with a second, bump material ~~for the bump~~ by electroplating₁ using the base as a plating power supply layer₁;

forming a barrier layer of a third material on the surface of the bump material ~~for the bump filled in each of the concavities~~ concavity, using the base as a plating power supply layer₁;

forming a stack of a predetermined number of wiring patterns on the insulating film, the adjacent wiring patterns in the stack being separated from each other by an intervening insulating layer and being electrically connected to each other through vias formed in the intervening insulating layer₁ ~~and the wiring patterns being electrically connected to the bump material for the bump filled in the concavities₁ and~~

removing the base from the stack of wiring patterns having bumps₁ each bump having the barrier metal film thereon, and removing the barrier metal film from each of the bumps.

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2. (AMENDED) The method of claim 1, wherein a ~~large-sized~~ metallic foil is used as the base, ~~for of a size permitting~~ simultaneous production of a plurality of wiring substrates.
3. (CURRENTLY AMENDED) The method of claim 21, wherein two metallic bases laminated by joining them by adhering the peripheries thereof are used, and the opposed sides of the laminate are covered with the electrical insulating film.
4. (ORIGINAL) The method of claim 1, wherein the open holes are formed in the insulating film so as to have tapered interior faces providing a larger diameter at the opening side rather than at the bottom exposing the base.
5. (ORIGINAL) The method of claim 1, wherein the etching used to etch the base for the formation of the concavities is isotropic, and wherein each of the concavities is formed to have a diameter at the interface with the insulating film, which is larger than the bottom diameter of the hole provided in the insulating film.
6. (ORIGINAL) The method of claim 1, wherein the concavities are filled with the material for the bump in such a manner that the material fully fills the concavity, and partially protrudes into the open hole in the insulating film.
7. (ORIGINAL) The method of claim 1, wherein the base is made of copper.
8. (ORIGINAL) The method of claim 7, wherein the base is a foil of copper.
9. (ORIGINAL) The method of claim 1, wherein the base is removed by etching.
10. (ORIGINAL) The method of claim 1, wherein the bumps are formed of solder or gold.

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11. (ORIGINAL) The method of claim 9, wherein the bumps are formed of solder.
12. (ORIGINAL) The method of claim 1, wherein the barrier metal film is formed of nickel or cobalt.
13. (AMENDED) The method of claim 1, wherein the barrier layer₁ on the surface of the bump material ~~for bump~~-filled in each concavity₁ is formed of nickel.